Claims 1-6 are interpreted as computer-aided method of predicting the depth of anesthesia, wherein the computer at least has a memory; and claims 7-10 are interpreted as an apparatus for predicting patient's response to anesthesia, *i.e.,* anesthesia depth in a patient relative to administered drug, wherein the apparatus at least comprises a memory.

Examiner's Response to Applicants' Arguments

The Examiner states that Applicants' arguments with respect to claims 1, 4 and 7 filed on June 8, 2009 have been considered but they are not persuasive. Applicants are considered by the Examiner to have argued three points:

i) 35 U.S.C. § 101 rejections of claims 1, 4 and 7;

ii) 35 U.S.C. § 112 rejection of claim 7; and

iii) 35 U.S.C. § 102 under Kangas, *et al.*

Regarding Applicants' first argument, the Examiner disagrees that claims 1, 4 and 7 recite patentable subject matter. According to the Examiner, claims 1-6 are rejected under 35 U.S.C. § 101 as not being significantly tied to another statutory class and for lack of utility. Similarly, the Examiner states that claims 7-10 are rejected for failing to comply with the utility requirement of 35 U.S.C. § 101. For a detailed explanation, the Examiner directs Applicants' attention to the 35 U.S.C. § 101 rejections.

Regarding Applicants' second argument, the Examiner indicates agreement with Applicants' assertion that the signal combiner arrangement, the limiter and the virtual anesthesia monitor are data structures implemented by a computer (Remarks, page 7). However, claim 7 as currently presented does not, in the opinion of the Examiner, recite a computer. Therefore, the Examiner asserts that the meters and bounds of claim 7 cannot be discerned. For detailed explanation, the Examiner directs Applicants' attention to the 35 U.S.C. § 112 rejections.

Regarding Applicants' third argument, the Examiner has cited additional sections of Kangas, *et al.* to clarify the rejection further. In this regard, the Examiner directs Applicants' attention to the Examiner's note on claim interpretation and to 35 U.S.C. § 102 for details.

APPLICANTS' RESPONSE

Applicants will respond below to the substance of the Examiner's commentary on Applicants' prior arguments in the context of the following remarks on the claim rejections.

Claim Rejections - 35 U.S.C. § 101

The Examiner states that "claims 1-10 stand rejected under 35 U.S.C. § 101 because the claimed invention is considered by the Examiner to be directed to non-statutory subject matter." In particular, the Examiner asserts that claims 1-6 are drawn to a "process." Under 35 U.S.C. § 101, according to the Examiner, a process must 1) be tied to another statutory class (such as a particular apparatus) or 2) transform underlying subject matter (such as an article or materials) to a different state or thing. This is called the "machine-or-transformation test".

The Examiner continues by stating that there are two corollaries to the machine-or-transformation test. First, a mere field-of-use limitation is generally insufficient to render an otherwise ineligible method claim patent-eligible. To the Examiner, this means that the machine or transformation must impose meaningful limits on the method claim's scope to pass the test. Second, insignificant extra-solution activity will not transform an unpatentable principle into a patentable process. To the Examiner, this means that the recitation of a specific machine or a particular transformation of a specific article in an insignificant step, such as data gathering or outputting, is not sufficient to pass the test. The Examiner did not recite statutory or regulatory bases for these assertions.

In the present case, claim 1 is considered by the Examiner to recite a method of assisting a human expert in reducing predictable variations in the depth of anesthesia by solving a mathematical formula using a computing device having a memory. However, use of a computing device to solve a formula does not, according to the Examiner, impose meaningful limits on the scope of a method claim. Furthermore, the use of a computing device to solve an equation/formula is, according to the Examiner, merely an insignificant extra-solution activity, *i.e.*, the method can be performed without the use of a computing device such as on a piece of paper by using one's hands and mind. Thus, the Examiner concludes that the tie between the method of claim 1 and the computing device recited in

claim 1 is neither meaningful nor significant, and therefore claim 1 does not, in the opinion of the Examiner, pass the machine-or-transformation test.

Claims 2-3 stand rejected at least for depending from rejected claim 1.

Claims 4-6 stand rejected for substantially the same reasons as claim 1.

(For details, the Examiner suggests that Applicants visit:

http://ptoweb.uspto.gov/patents/3700/documents/101.memo.01.07.09.pdf).

According to the Examiner, 35 U.S.C. § 101 further requires that a process be useful. Accordingly, one must then consider whether the claimed invention produces a useful, concrete, and tangible result. The Examiner provides the following explanation and analysis of the requirements of 35 U.S.C. § 101:

(1) USEFUL RESULT

For an invention to be "useful" it must satisfy the utility requirement of section 101. The USPTO's official interpretation of the utility requirement provides that the utility of the invention has to be (i) specific, (ii) substantial and (iii) credible. See MPEP 2107. It can be argued that the claim does not provide a useful result such that the claim does not actually solve a problem. The method of claim 1 recites only one step i.e., "the step of solving in the computing machine the formula." A method comprising the step of solving a formula with no implication and or output of result thereafter does not appear to be useful.

Similarly the method of claim 4 does not have an output i.e., after the sensitivity of [the] patient is determined, how is it then used? The method does not appear to be useful since there is no step of displaying and/or announcing the result to the user.

(2) TANGIBLE RESULT

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a 101 judicial

exception, in that the process claim must set forth a practical application of that 101 judicial exception to produce a real world result.

Regarding the tangible result requirement, the claims 1 and 4 clearly do not provide a practical application for reasons similar to that discussed above. For example, once the formula is solved, how is this result then applied? And/or how does solving a formula leads to reducing predictable variations in the depth of anesthesia?

(3) CONCRETE RESULT

Another consideration is whether the invention produces a "concrete" result. Usually, this question arises when a result cannot be assured. In other words, the process must have a result that can be substantially repeatable or the process must substantially produce the same result again. Resolving this question is dependent on the level of skill in the art. For example, if the claimed invention is for a process which requires a particular skill, to determine whether the process is substantially repeatable will necessarily require a determination of the level of skill of the ordinary skilled artisan.

Regarding the concrete result requirement, claims 1 and 4 do not provide i.e. announce or display results. Furthermore, the process of claims 2 and 4 depend on the skill level of a human expert, provided that different human experts can have different level of skill sets, there is a reasonable doubt that the result is substantially repeatable and the process can substantially produce the same results again.

The Examiner states that, in view of the above analysis, Applicants' claims 1 and 4 are processes that include a "judicial exception" therein. The Examiner continues by stating that: *upon review of the claims as a whole, there is no transformation nor do the claims produce useful, concrete, and tangible results*. The Examiner therefore concludes that the claims are non-statutory under 35 U.S.C. § 101 and lack utility. Furthermore, the Examiner asserts that claims 2-6 are rejected at least for being dependent on rejected claims 1 and 4.

The apparatus of claims 7-10 is considered by the Examiner to lack utility under 35 U.S.C. § 101 for the reasons identified above. More specifically, the Examiner states that

the apparatus of claim 7 only performs data processing on stored data and produces a result (virtual anesthesia monitor produces an anesthesia value; claim 7, line 16), however this result, according to the Examiner, is never displayed or announced to the user such that it is not useful.

Claim 7 is considered by the Examiner to recite an apparatus comprising a plurality of virtual instruments (VIs) such as first, second, and third memories; a signal combiner; a limiter; and a virtual anesthesia monitor; used for storing and processing data. However, the Examiner concludes that the apparatus does not comprise an output and/or a display such that there is no indication and/or announcement of this result to the user. According to the Examiner, claim 7 therefore lacks utility under 35 U.S.C. § 101.

Claims 8-10 stand rejected by the Examiner at least for being dependent from rejected claim 7.

APPLICANTS' RESPONSE

Applicants have amended independent claims 1 and 4 to specify subject matter that is within the scope of 35 U.S.C. § 101. With respect to independent claim 1, amendments have been made to specify an apparatus aspect of the invention. All of the claim elements are physical components, and therefore the Examiner's rejection of this claim under 35 U.S.C. § 101 is respectfully asserted to be overcome. Dependent claims 2 and 3 have correspondingly been amended, and therefore the Examiner's rejection of these claims under 35 U.S.C. § 101 is also believed to be overcome.

With respect to independent claim 4, this claims has been amended to specify a method of using a computing machine to assist a human expert in the administration of anesthesia to a patient. The claim now specifies the use of physical equipment in the form of a computing machine, and further specified that data is displayed to an operator, the data corresponding to the solution of a mathematical formula.

With respect to independent claim 7, Applicants respectfully disagree with the Examiner's rejection of this claim under 35 U.S.C. § 101. Claim 7 is clearly an apparatus claim, as are its associated dependent claims 8-10. More specifically, independent claim 7 specifies a first memory; a second memory; a third memory; a signal combiner

arrangement; a limiter; and a virtual anesthesia monitor. None of these claimed structural or virtual elements constitutes a process step.

In view of the foregoing, it is respectfully asserted that the Examiner's rejection of claims 1-10 under 35 U.S.C. § 101 has been overcome.

Claim Rejections - 35 U.S.C. § 112, First Paragraph

Claims 1-10 stand further rejected by the Examiner under 35 U.S.C. § 112, first paragraph. The Examiner states that since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above (lack of utility under 35 U.S.C. § 101), one skilled in the art clearly would not know how to make or use the claimed invention.

APPLICANTS' RESPONSE

In regard of this rejection, Applicants respectfully draw the Examiner's attention to the amendments to the claims, and to the arguments advanced above directed to the patentability of the rejected claims. More specifically, the amendments and arguments overcome the Examiner's rejections under 35 U.S.C. § 101, and accordingly, these claims specify an invention with specific and substantial asserted utility, as well as a well established utility.

Accordingly, it is respectfully asserted that the Examiner's rejection under 35 U.S.C. § 112, first paragraph has been overcome.

Claim Rejections - 35 U.S.C. § 112, Second Paragraph

Claims 1-10

Claims 1-10 further stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out with particularity and claim distinctly the subject matter that Applicants regard as the invention.

The Examiner continues the comment by alleging that claim 1 recites a method of assisting a human expert in reducing predictable variations in the depth of anesthesia. However, according to the Examiner, the above identified method only comprises one step *i.e.*, solving a formula. The Examiner states that it is not clear how a single step of solving the formula leads to assisting a human expert in reducing predictable variations in the depth of anesthesia, *i.e.*, what additional steps are performed after solving said formula? More

particularly, the Examiner questions how the output of the formula is used in assisting the human expert. Furthermore, it is unclear to the Examiner what is the output of the formula, *i.e.*, the variables *y* or $f_p(x)$ are not, according to the Examiner, defined in claim 1.

Similarly, the Examiner states that *x*, Φ_1, Φ_2, and Φ_3 are undefined, such that the metes and the bounds of the claim can not be discerned. Furthermore, time periods τ_p and T_p lack antecedent basis *i.e.*, claim 1 defines τ_p and T_p however, it is unclear to the Examiner how τ_p and T_p are being used in the method of assisting a human expert in reducing predictable variations in the depth of anesthesia. It is further unclear to the Examiner what is meant by the limitation "where the coefficients C_1, C_2, C_3, as well as the time periods τ_p and T_p are initiated" (claim 1, lines 6-7). For example, the Examiner questions, if coefficients C_1, C_2, C_3, are constants and τ_p and T_p represent time (*i.e.*, real numbers), then how, the Examiner queries, are they "initiated?"

Regarding claim 2, it is unclear to the Examiner that the value of 1-10, assigned by the human Expert corresponds to which variable of the formula identified in claim 1. More particularly, the Examiner questions how is the value of patient's response to infusion of the anesthesia drug being used to assist a human expert in reducing predictable variations in the depth of anesthesia?

Regarding claim 3, the Examiner states that "approximately" is a relative term, and that the use of relative terms renders a claim indefinite such that the broadest reasonable interpretation of the claim is not clear.

Regarding claim 4, the Examiner notes that there are two steps identified as the "first step" and two steps identified as the "second step". It is unclear to the Examiner, what is the sequence of the different steps being performed in the method and/or if the two steps identified as "first" and the two steps identified as "second" are being performed simultaneously. The Examiner continues by stating that the preamble of claim 4 recites a method of determining a "model" corresponding to predicted "patient response" to anesthesia drug delivery. However, the claim is considered by the Examiner to fail to recite how that model is determined by the different steps performed in the method. More particularly, it is unclear to the Examiner that how the steps of determining and entering

an initial time delay, a time constant and determining a "nonlinear static function" representing the "sensitivity" of the patient to a dosage of anesthesia drug, leads to determination of a "model" for predicting "patient response" to anesthesia drug delivery. Applicant is advised by the Examiner to use consistent claim language *i.e.,* if a "nonlinear static function" representing the "sensitivity" of the patient is intended to be a "model" for predicting "patient response," then the Examiner believes that the claim should be amended to recite as such.

According to the Examiner, claims 5-6 are rejected at least for depending from rejected claim 4.

APPLICANTS' RESPONSE

With respect to independent claim 1, it is noted that this claim has been amended to specify elements of structure that assist a human expert in the determination of the proper administration of anesthesia to a patient. The initial values of the parameters C_1, C_2, and C_3 can be easily provided by an anesthesiologist. The anesthesiologist uses his/her training and experience to determine the anesthesia drug dosage on the basis of the patient's weight, age, and pre-existing medical conditions. This determination is in fact an estimation of the patient response to the drug in terms of the three parameters: the delay time, response speed, and sensitivity.

The claimed arrangement does not require anything more than this initial estimation. It should be emphasized that this is merely an initial estimation. For example, an anesthesiologist might have an estimate of "20-30" second delay time, "10-20" minutes response time, and expected depth settling value around "60-65." The anesthesiologist can therefore choose any values in these ranges as initial values, as is the case in present practice. In other words, the claimed arrangement does not require additional training for the anesthesiologist to provide such initial values. An accurate estimation of these parameters will then be provided by the algorithm and the apparatus from measured data.

In the practice of the invention, the front panel of the apparatus will be provided with easily recognizable entry points for the estimated values, the use of which is well within the abilities of almost any computer user. This simplicity is an important feature of the present invention. Due to physiological meanings of the parameters, their initial values can easily

be determined by an anesthesiologist. More specifically, their estimation will have clear meanings to the anesthesiologist.

The present anesthesia-based model has but a few parameters to be estimated, but can nevertheless represent the dynamics of the patient quite accurately. By way of comparison, the known systems that use a neural network or fuzzy models have many weighting parameters, typically 20-100. These parameters are entirely internal and cannot be determined from the external observable features such as delay time, response time, and sensitivity. Consequently, existing systems require the device technicians who serve as system operators to be extensively trained to manage the known devices and to interact with the anesthesiologist.

Another fundamental issue is that with so many parameters to determine during operation, the real observation data (drug infusion rates and measured anesthesia depth) will not be sufficiently rich to estimate the parameters. In contrast, the three parameters used in the practice of the present invention can always be determined from real-time operational data, mostly due to the low number (three) of parameters and their exact correspondence to the observed anesthesia depth time trajectory.

Claims 7-10

Regarding claim 7, "the system" (claim 7, line 2) is considered by the Examiner to lack antecedent basis. Furthermore, it is unclear to the Examiner that what is the structure associated with the claimed apparatus and/or system.

The Examiner states that the apparatus as recited in claim 7 comprises first, second, and third memories; a signal combiner arrangement; a limiter; and a virtual anesthesia monitor. The Examiner claims that it is evident from the figures (Figs. 1, 11, 14, and 15), corresponding description in the specification, and Applicants' disclosure on the record (Remarks, page 7), that the signal combiner arrangement, limiter, and the anesthesia monitor are virtual instruments (VIs) assembled in a programming language such as LabView™ or C++, *i.e.,* they are data structures or algorithms implemented by a processor (Remarks; page 7, lines 11-16). However, the Examiner asserts that claim 7 as currently presented does not recite a computer or a processor. It is unclear to the Examiner that whether the apparatus of claim 7 is a processor or a memory device (computer readable

medium) such as flash drive, floppy disk, CD, or any other tangible computer readable media. As an example, the Examiner asserts that the apparatus of claim 7 can be a processor with above-identified data structures embedded in it, on the other hand it can simply be a memory device storing a program *i.e.*, computer readable instructions for the execution of above identified data structures. Claim 7, therefore is deemed by the Examiner to be indefinite such that the metes and bounds of claim 7 can not be discerned.

Regarding claim 8, the limitation "third anesthesia level" (claim 8, line 1-2), is considered by the Examiner to lack antecedent basis. Claim 7 identifies, according to the Examiner, a "third output signal" (claim 7, line 11) and a corresponding "anesthesia effect level". Applicant is advised by the Examiner to use consistent claim language, *i.e.,* if a "third output signal" (claim 7, line 11), is intended to be the "third anesthesia level" (claim 8, lines 1-2), than the claim should be amended to recite as such. Furthermore, claims 8 and 9 recite the abbreviation "BIS." However, according to the Examiner, there is insufficient antecedent basis for this limitation in the claims. The metes and bounds of the claims cannot be determined because it is unclear to the Examiner whether "BIS" stands for Bispectral index or something different. The Examiner suggests amending claim 8 to recite the actual term/phrase rather than the abbreviation.

The Examiner states that claim 10 as currently presented recites "a source of known unpredictable disturbances." The Examiner suggests amending this claim to "a source for producing known noise to compensate for unpredictable disturbance signals."

Claims 8-10 also stand rejected for being dependent on rejected claim 7.

APPLICANTS' RESPONSE

Applicants have amended independent claim 7 to effect correction of the misusage of the term "the system" noted by the Examiner. Accordingly, this aspect of the Examiner's rejection has been overcome.

In addition to the foregoing, independent claim 7 has been amended to specify a processor and a display apparatus. Accordingly, the Examiner's rejection based on indefiniteness has been overcome.

With respect to dependent claim 8, the confusion related to the "third anesthesia level" noted by the Examiner has been corrected by amendment wherein the language

reciting "third anesthesia level" has been deleted. In addition, the term "BIS" has been replaced by the phrase "bi-spectrum."

Claim 10 has been amended in accordance with the Examiner's suggestion. Accordingly, the Examiner's rejection of claims 7-10 under 35 U.S.C. § 112, second paragraph, has been overcome.

Claim Rejections - 35 U.S.C. § 102(b)

Claims 1-10 stand rejected under 35 U.S.C. § 102(b) as specifying subject matter considered by the Examiner to be anticipated by Kangas, *et al.* (US 5,775,330) hereinafter referred as the Kangas, *et al.* reference.

Regarding claims 1-6, the Kangas, *et al.* reference is considered by the Examiner to disclose a method of predicting the anesthetic depth of a patient by performing a bispectral analysis of the patient's EEG signals using a back-propagation artificial neural network (column 5, line 4 - column 6, line 48). Furthermore, the hidden layers of artificial neural network (ANN) are indicated by the Examiner to be trained and reconfigured to choose variables for minimizing mean square error (MSE; read on Weiner structure) and back-propagate data sets to recognize nonlinearities (reads over Hammerstein structure; column 6, lines 9-48). In this regard, the Examiner directs Applicants' attention to "Example 1" for detailed information of data acquisition, processing, and calculation of result, *i.e.*, depth of anesthesia.

Regarding claims 7-10, the Kangas, *et al.* reference is considered by the Examiner to disclose a portable device comprising electrodes for data acquisition (EEG signals) and Cadwell™ laboratories Spectrum 32 v4.3 signal analyzer and artificial neural network to aid an anesthesiologist in surgery (column 4, lines 25-50). The current device is used to predict the anesthesia depth of patients based on bolus anesthesia dosage ("Example 1" isoflurane supplemented with intravenous agent midazolam; column 6, lines 56-57), titrated anesthesia dosage (continuous isoflurane vapor during surgery; column 6, lines 58-6 1), time of wake and sleep (table 1) and corresponding patient dynamics (EEG data acquired during the surgery; column 6, line 62 — column 7, line 9). The EEG of patients is recorded (*i.e.*, device has memory; column 7, lines 3-9) and processed to perform bispectral analysis (BIS) using Fourier Transform (column 7, line 44 — column 8, line 26; Notice: the Examiner

is interpreting input of ANN to be the signal combiner, hidden layers to be the data processors and output to be the virtual anesthesia monitor; column 7, line 38 - column 8, line 8). The depth of anesthesia during surgery is represented by graphs (Fig. 2a; column 8, lines 37-64). The system is considered by the Examiner to apply further a smoothing function to compensate for sporadic noise in the EEG data (column 8, line 65 - column 9, line 4; Read "Example 1" for detailed description of the data processing).

APPLICANTS' RESPONSE

Briefly, the Kangas, *et al.* reference describes a method and apparatus for collecting EEG data, reducing the EEG data into coefficients, and correlating those coefficients with a depth of unconsciousness or anesthetic depth, and which obtains a bounded first derivative of anesthetic depth to indicate trends. An artificial neural network based method continuously analyzes EEG data to discriminate between awake and anesthetized states in an individual and continuously monitors anesthetic depth trends in real-time. This enables an anesthesiologist to respond to changes in anesthetic depth of the patient during surgery and to administer the correct amount of anesthetic. The use of brain wave data processed by a trained neural network ascertains the level of consciousness of an individual and a consciousness trend before during and after exposure to anesthetic.

The foregoing notwithstanding, the system described in the Kangas, *et al.* reference cannot determine whether the patient is adequately anesthetized. The adequacy of anesthesia is a difficult problem for anesthesiologists who occasionally fail despite the fact that they attempt to over anesthetize the patient to ensure adequate anesthesia.

The Kangas, *et al.* reference is directed to anesthesia depth measurement and calculation only. The word "prediction" is used in regard of the known system only in the sense that EEG signals are "analyzed" to "calculate" anesthesia depth and its derivatives. This known system, however, does not address the issue of how a drug input strategy will influence the anesthesia depth in the future. On the contrary, the present claimed invention achieves drug impact prediction. The system of the Kangas, *et al.* reference does not possess a "prediction" capability, as does the present invention, but rather is a method of calculating actual (not predicted) anesthesia depth. In short, the Kangas, *et al.* reference teaches subject matter already in use in FDA approved devices, such as the BIS Monitor by

Aspect, and Entropy Monitor by GE, which are employed for anesthesia depth measurements and which produce a corresponding display to the operator. In contrast, anesthesia depth measurements are the input signals to the present claimed system.

In addition to the foregoing, it is noted that drug impact prediction depends on the response to drugs by each individual patient. Thus, there is a need for individual patient dynamic models. The system described in the Kangas, *et al.* reference has nothing to do with patient models. In fact, it is admitted in the Kangas, *et al.* reference that the invention therein described cannot determine whether the patient is adequately anesthetized. It is therefore respectfully asserted that the Examiner has incorrectly characterized the Kangas, *et al.* reference as "predicting the anesthetic depth of a person by analyzing his EEG signals" or as useful to "process the EEG signals and transform them to predict the anesthetic depth of a patient."

With reference to amended independent claim 1, it is noted that this claim specifies an apparatus for assisting a human expert during the administration of a medical anesthesia drug to a patient." Nothing in the Kangas, *et al.* reference achieves, teaches, or suggests such prediction. Moreover, nothing in the Kangas, *et al.* reference suggests that a human expert can in any way be assisted in the administration of anesthesia by an arrangement that solves the formula:

$$y = f_p(x) = C_1 \frac{x}{x_1} \Phi_1(x) + C_2 \frac{x}{x_2} \Phi_2(x) + C_3 \frac{x}{x_3} \Phi_3(x)$$

With reference to amended independent claim 4, it is noted that this claim specifies a "method of using a computing machine to assist a human expert in the administration of anesthesia to a patient, the computing machine having a memory to determine a model that corresponds to a predicted response of a patient to anesthesia drug delivery." Nothing in the Kangas, *et al.* reference teaches or suggests the determination of a model of a patient response, or a prediction of the patient's response to anesthesia. Additionally, nothing in the applied references suggests that a patient's response to the administration of anesthesia can be modeled using the aforementioned formula.

With respect to amended independent claim 7, it is noted that this claim specifies "apparatus for determining a predicted response of a patient to the administration of an anesthesia drug." Again, nothing in the Kangas, *et al.* reference teaches or suggests apparatus that serves to predict a patient's response to anesthesia.

In view of the foregoing, it is respectfully asserted that the Examiner's rejection of claims 1-10 under 35 U.S.C. § 102(b) has been overcome, and that these claims are in allowable condition.

Conclusion

In view of the foregoing, it is respectfully requested that the Examiner reconsider the present application, allow the claims, and pass the application for issue. If the Examiner believes that the prosecution of this case can be expedited by a telephone interview, the Examiner is requested to call attorney for Applicant(s) at the telephone number indicated hereinbelow.

Respectfully submitted,

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enc Annexure 1 - Claims Rewritten to Show Amendments
File: RFOA.WSL